Worksheet: Electronegativity, polar, nonpolar, and ionic bonds.

Where are the metals vs nonmetals located on the periodic table?

What type of charge do metals vs nonmetals have? (positive and/or negative)

State the values for the charge(s) for each of the groups on the period table.

The overall charge of a compound should always be\_\_\_\_\_\_\_\_\_\_.

What is an ionic bond?

What is a covalent bond?

What is a polar covalent bond?

What is a nonpolar covalent bond?

What is electronegativity?

1. Arrange the following elements in order of increasing force of attraction between the nucleus and the electrons.(Electronegativity)

a. arsenic, gallium, germanium, radium, sulfur

b. aluminum, potassium, francium, nitrogen, iodine

2. Classify the bonds as polar, nonpolar, or ionic. Also include percentages.

a. boron-carbon f. beryllium-fluorine

b. cesium-fluorine g. bromine-strontium

c. fluorine-silicon h. chlorine-lithium

d. hydrogen-chlorine i. chlorine-sodium

e. magnesium-nitrogen j. hydrogen-iodine

3. Fill in the chart.

Bond Pair Electron Difference % ionic % covalent ionic/covalent polar/nonpolar/neither

a. sodium-

oxygen

b. hydrogen-

bromine

c. lead-

sulfur

d. carbon-

nitrogen

e. magnesium-

iodine

4. For each atom pair listed below, decide whether an ionic, polar, or nonpolar bond would form between the elements.

a. fluorine-astatine d. lanthanum-selenium

b. boron-thorium e. strontium-chlorine

c. gadolinium-astatine f. iodine-sodium

5. The following pairs of atoms are all covalently bonded. Arrange the pairs in order of decreasing polarity of the bond pairs.

a. boron-nitrogen d. iodine-technetium

b. carbon-sulfur e. nitrogen-oxygen

c. hydrogen-selenium f. aluminum-phosphorus



